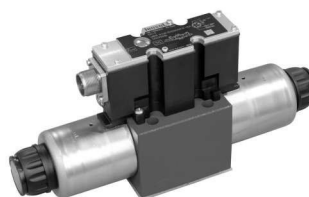


4/2- and 4/3-way proportional directional valves, direct operated, without electrical position feedback, without/with integrated electronics (OBE)

Types 4WRA and 4WRAE

Nominal sizes 6 and 10
 Component series 2X
 Maximum operating pressure 315 bar
 Maximum flow: 42 l/min (NS6)
 75 l/min (NS10)



H4678
 Type 4WRAE 6 ...-2X/G24K31/V
 with integrated electronics (OBE)



H5964
 Typ 4WRA 10 ...-2X/G24...K4/V
 with plug-in connectors and
 associated control electronics
 (separate order)

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Features

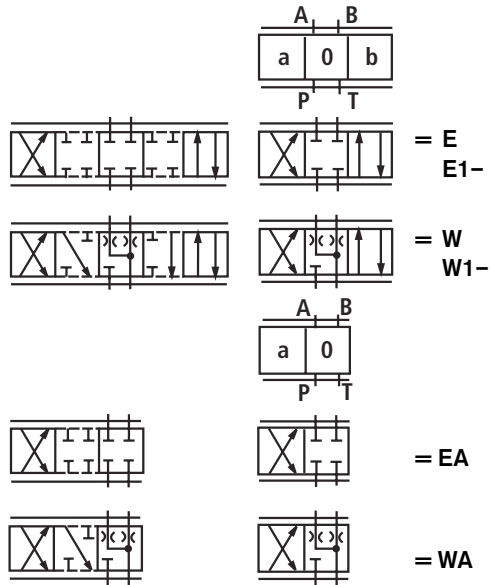
- Direct operated proportional directional valve without electrical position feedback and integrated electronics (OBE) for type 4WRAE
- Control the direction and magnitude of a flow
- Actuation by means of proportional solenoids with central thread and removable coil
- For subplate mounting:
 Connection position to ISO 4401
 Subplates to catalogue sheets RE 45052 (NS6) or RE 45054 (NS10) separate order, see page 12 to 15
- Spring centred control spool
- Control electronics
 - 4WRAE:
 - integrated electronics (OBE) with voltage input or current input (A1 resp. F1)
 - 4WRA:
 - digital or analogue amplifier in Eurocard format (separate order)
 - analogue module amplifier

Ordering details

4WRA				-2X/	G24		/	V	*
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Without integrated electronics (OBE) = No code
 With integrated electronics (OBE) = E
 Nominal size 6 = 6
 Nominal size 10 = 10

Spool symbols



With spool symbols E1- and W1-:
 P → A: $q_{V \max}$ B → T: $q_V/2$
 P → B: $q_V/2$ A → T: $q_{V \max}$

Note:
 With spools W and WA, in the neutral position, there is a connection from A to T and B to T with approx. 3 % of the relevant nominal cross-section.

Further details in clear text

Seal material
 FKM seals, suitable for mineral oil (HL, HLP) to DIN 51524

V =

Electronic interfaces A1 or F1 for 4WRAE

A1 = Command value input ± 10 V

F1 = Command value input 4 to 20 mA

No code = For 4WRA

Electrical connections for 4WRA:

K4 ²⁾ = Without plug-in connector, with component plug to DIN EN 175301-803
 plug-in connector – separate order, see page 7

for 4WRAE:

K31 ²⁾ = Without plug-in connector, with component plug to DIN EN 175201-804
 plug-in connector – separate order, see page 7

Special protection

No code = Without special protection
 J ¹⁾ = Sea water resistant (only for NS6)

For details regarding the sea water resistant versions see RE 29055-M

G24 = Supply voltage 24 VDC

2X = Component series 20 to 29
 (20 to 29: unchanged installation and connection dimensions)

Nominal flow at a valve pressure differential $\Delta p = 10$ bar

	NS6
07 =	7 l/min
15 =	15 l/min
30 =	26 l/min
	NS10
30 =	30 l/min
60 =	60 l/min

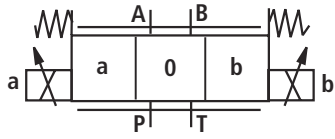
¹⁾ Other types of electrical protection on request

²⁾ Only for NS6: for version "J" = sea water resistant only state "K31"!

Symbols

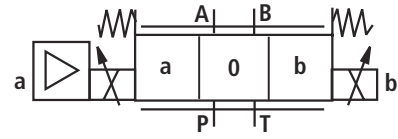
Without integrated electronics

Type 4WRA...

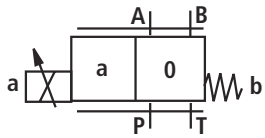


With integrated electronics (OBE)

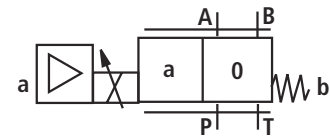
Type 4WRAE...



Types 4WRA...**EA**...; 4WRA...**WA**...

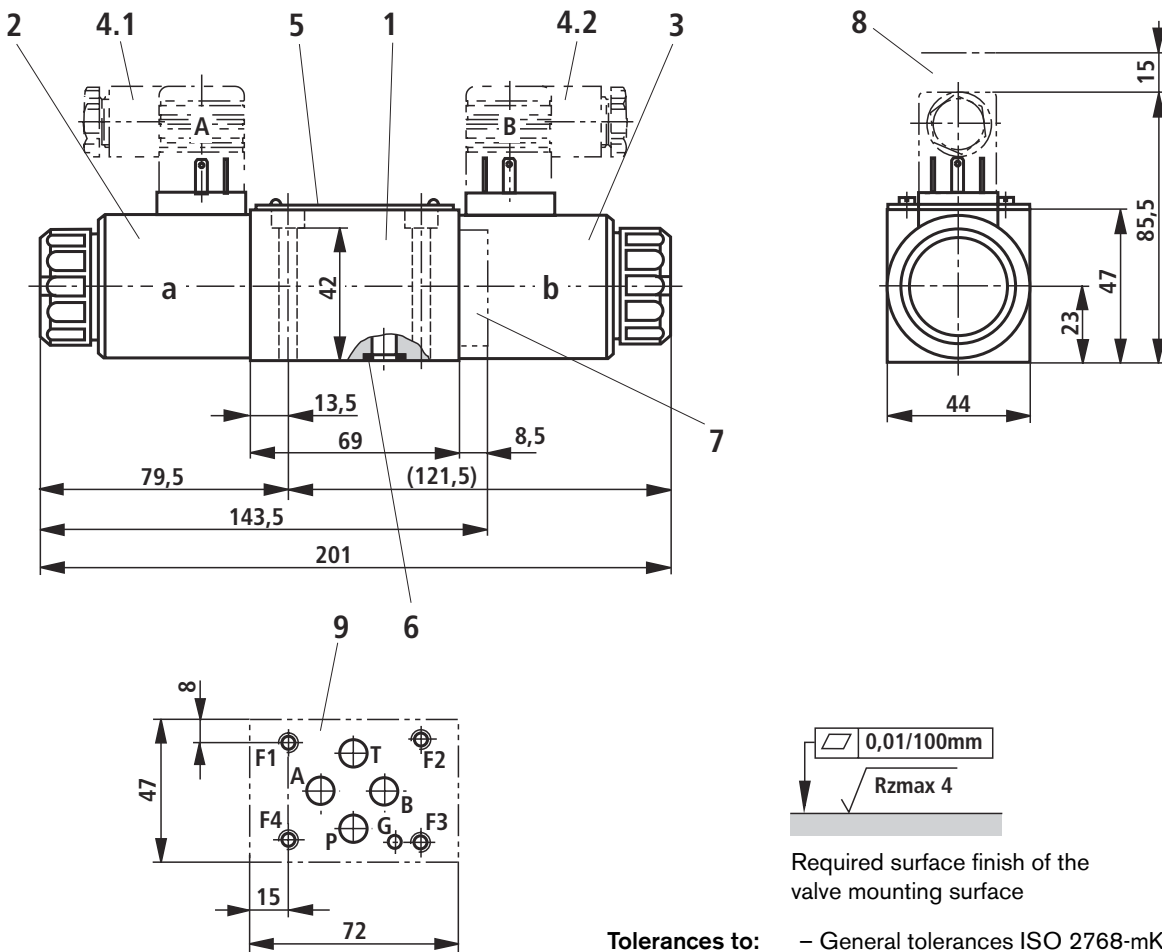


Types 4WRAE...**EA**...; 4WRAE...**WA**...



Unit dimensions: Type 4WRA 6 (nominal dimensions in mm)

NS6



Tolerances to: – General tolerances ISO 2768-mK

- 1 Valve housing
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4.1 Plug-in connector "A", colour grey, separate order, see page 7
- 4.2 Plug-in connector "B", colour black, separate order, see page 7
- 5 Name plate
- 6 Identical seal rings for ports A, B, P and T
- 7 Plug for valves with one solenoid (2 switched positions, versions EA or WA)
- 8 Space required to remove the plug-in connector
- 9 Machined valve mounting surface, Connection location to ISO 4401 (with locating pin hole) Code: 4401-03-02-0-94 (explanation to ISO 5783) Deviation from the standard:
 - without locating pin hole „G“
 - ports P, A, B and T mit $\text{Ø}8$ mm

Subplates to catalogue sheet RE 45052 and valve fixing screws must be ordered separately.

Subplates: G341/01 (G1/4)
G342/01 (G3/8)
G502/01 (G1/2)

Valve fixing screws (separate order)

The following valve fixing screws are recommended:

– 4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9-flZn-240h-L

(friction value $\mu_{\text{total}} = 0.09$ to 0.14)

Tightening torque $M_A = 7 \text{ Nm} \pm 10\%$

Material No. **R913000064** (separate order)

or

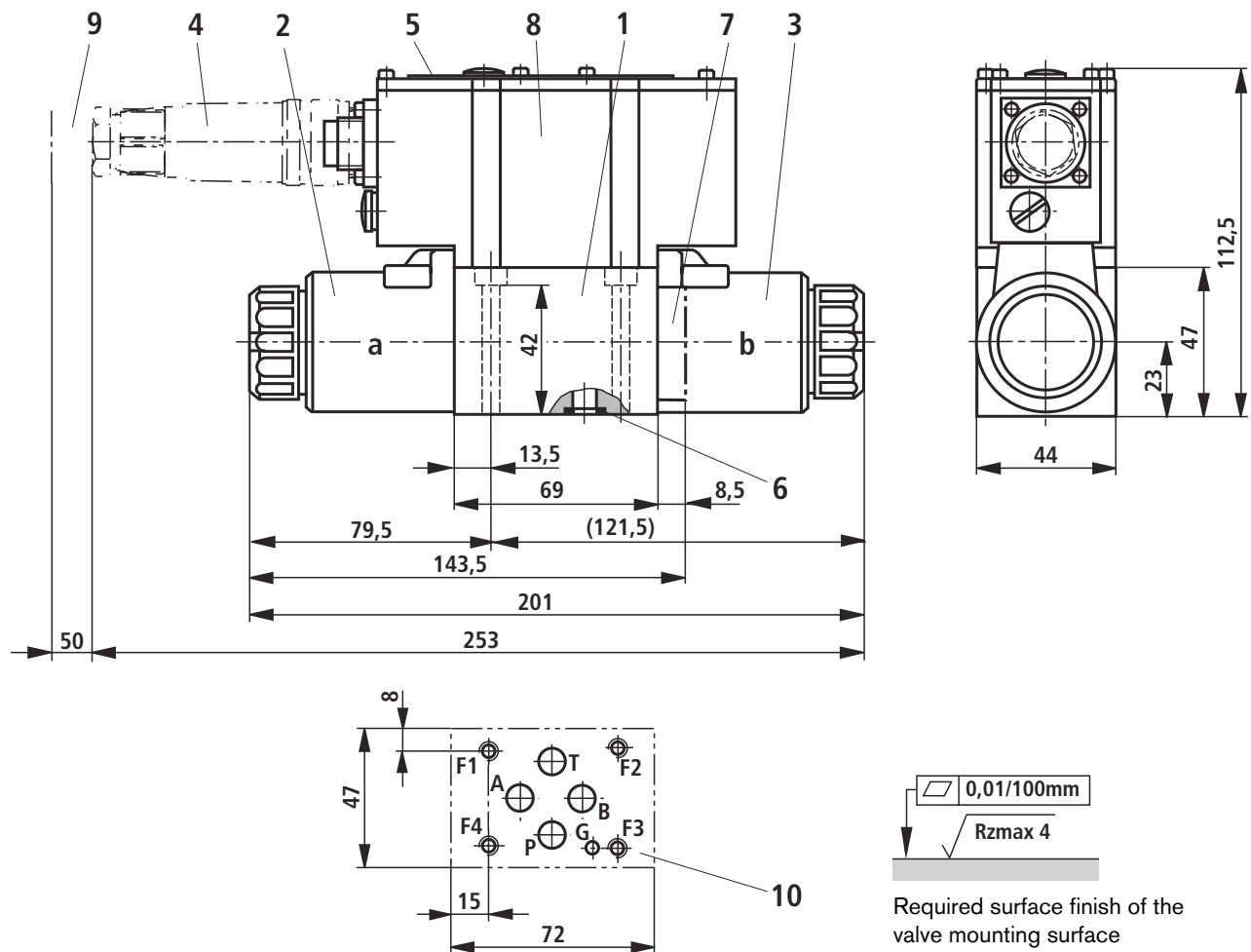
– 4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9

(friction value $\mu_{\text{total}} = 0.12$ to 0.17)

Tightening torque $M_A = 8.9 \text{ Nm} \pm 10\%$

Unit dimensions: Type 4WRAE 6 ...K31/..V (nominal dimensions in mm)

NS6



Tolerance to: – General tolerances to ISO 2768-mK

- 1 Valve housing
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4 Plug-in connector to DIN EN 175201-804, separate order, see page 7
- 5 Name plate
- 6 Identical seal rings for ports A, B, P und T
- 7 Plug for valves with one solenoid (2 switched positions, versions EA or WA)
- 8 Integrated electronics (OBE)
- 9 Space required for the connection cable and to remove the plug-in connector
- 10 Machined valve mounting surface, Connection location to ISO 4401 (with locating pin hole) Code: 4401-03-02-0-94 (explanation to ISO 5783) Deviation from the standard:
 - without locating pin hole „G“
 - ports P, A, B and T mit $\varnothing 8$ mm

Subplates to catalogue sheet RE 45052 and valve fixing screws must be ordered separately.

Subplates: G341/01 (G1/4)
G342/01 (G3/8)
G502/01 (G1/2)

Valve fixing screws (separate order)

The following valve fixing screws are recommended:

– 4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9-fZn-240h-L

(friction value $\mu_{\text{total}} = 0.09$ to 0.14)

Tightening torque $M_A = 7 \text{ Nm} \pm 10\%$

Material No. **R913000064** (separate order)

or

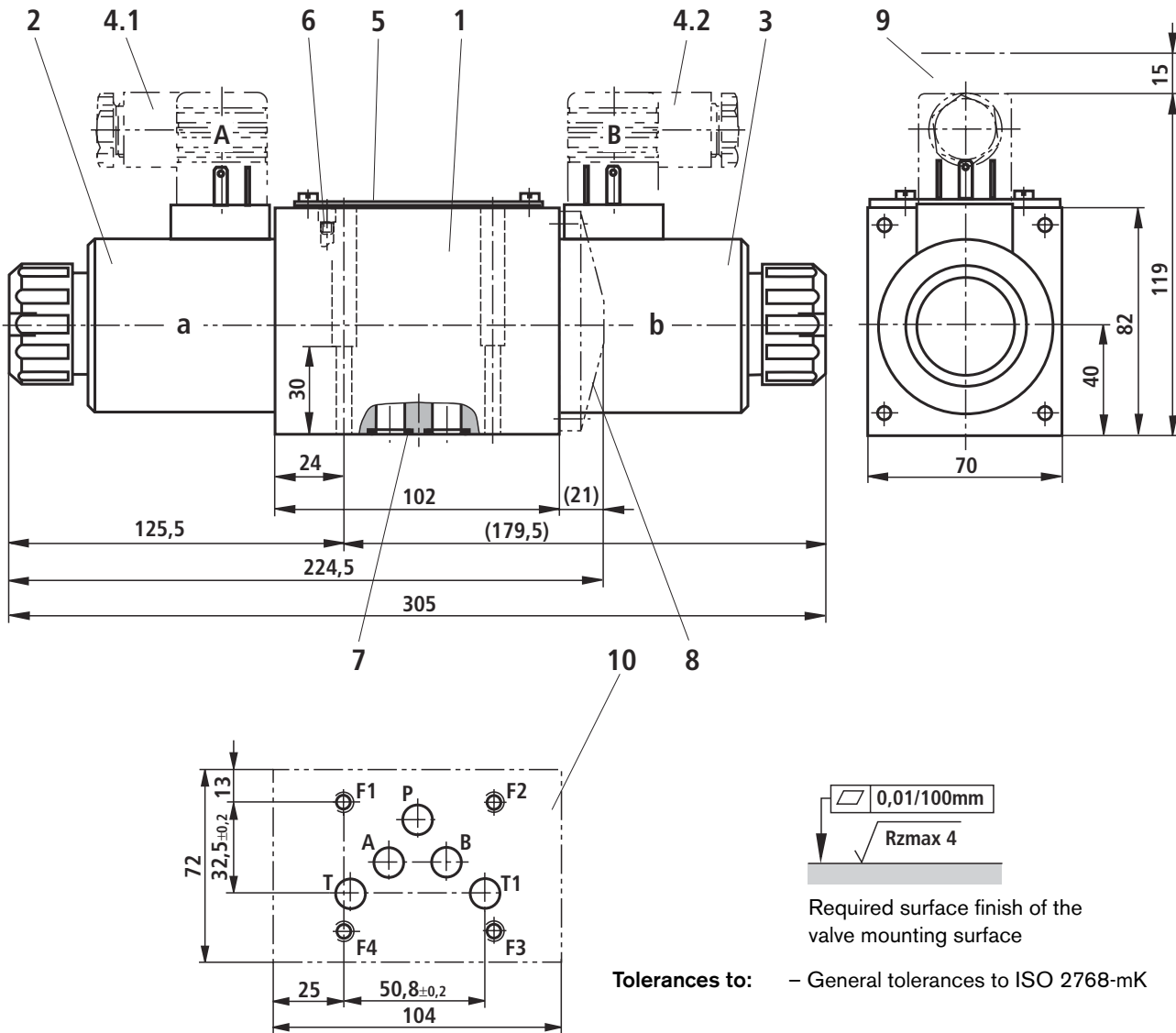
– 4 S.H.C.S. ISO 4762 - M5 x 50 - 10.9

(friction value $\mu_{\text{total}} = 0.12$ to 0.17)

Tightening torque $M_A = 8.9 \text{ Nm} \pm 10\%$

Unit dimensions: Type 4WRA 10 (nominal dimensions in mm)

NS10



- 1 Valve housing
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4.1 Plug-in connector "A", colour grey, separate order, see page 7
- 4.2 Plug-in connector "B", colour black, separate order, see page 7
- 5 Name plate
- 6 Valve bleed screw
Note: The valves are bled before delivery.
- 7 Identical seal rings for ports A, B, P and T (T1)
- 8 Cover for valves with one solenoid (2 switched positions, versions **EA** or **WA**)
- 9 Space required to remove the plug-in connector
- 10 Machined valve mounting surface, Connection location to ISO 4401 (**with** locating pin hole) Code: 4401-05-04-0-94 (explanation to ISO 5783) Deviation from the standard: Port T1 Ø11.2 mm

Subplates to catalogue sheet RE 45054 and valve fixing screws must be ordered separately.

Subplates: G66/01 (G3/8)
G67/01 (G1/2)
G534/01 (G3/4)

Valve fixing screws (separate order)

The following valve fixing screws are recommended:

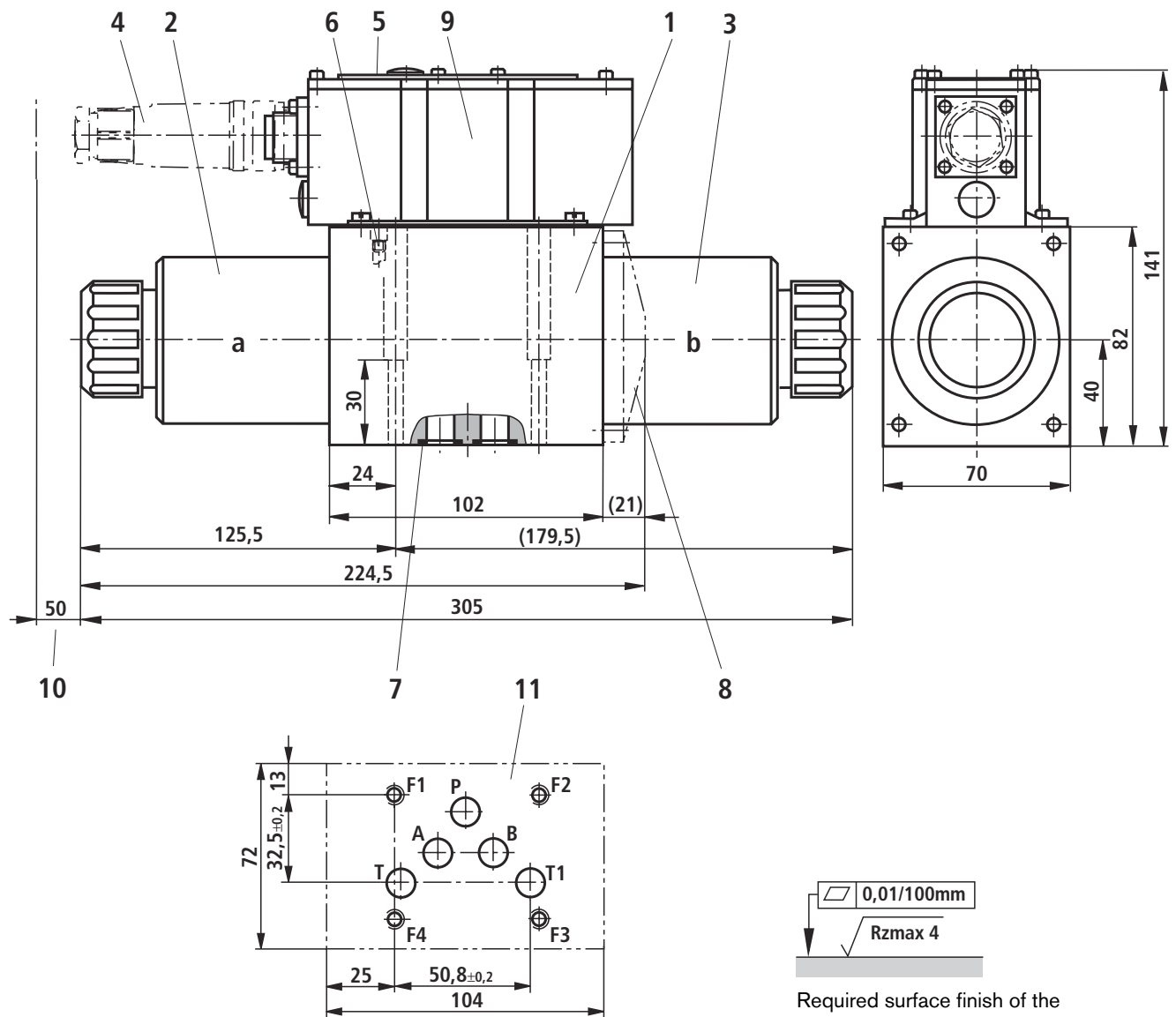
– 4 **S.C.H.S. ISO 4762 - M6 x 40 - 10.9-flZn-240h-L**
(friction value $\mu_{\text{total}} = 0.09$ to 0.14)
Tightening torque $M_A = 12.5 \text{ Nm} \pm 10\%$,
Material No. **R913000058** (separate order)

or

– 4 **S.C.H.S. ISO 4762 - M6 x 40 - 10.9**
(friction value $\mu_{\text{total}} = 0.12$ to 0.17)
Tightening torque $M_A = 15,5 \text{ Nm} \pm 10\%$

Unit dimensions: Type 4WRAE 10 (nominal dimensions in mm)

NS10



- 1 Valve housing
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4 Plug-in connector to DIN EN 175201-804, separate order, see page 7
- 5 Name plate
- 6 Valve bleed screw
Note: The valves are bled before delivery.
- 7 Identical seal rings for ports A, B, P, T
- 8 Cover for valves with one solenoid (2 switched positions, versions EA or WA)
- 9 Integrated electronics (OBE)
- 10 Space required for the connection cable and to remove the plug-in connector
- 11 Machined valve mounting surface, connection location to ISO 4401 (**with** locating pin hole)
Code: 4401-05-04-0-94 (explanation to ISO 5783)
Deviation from the standard: Port T1 Ø11.2 mm

Tolerances to: – General tolerances to ISO 2768-mK

Subplates to catalogue sheet RE 45054 and valve fixing screws must be ordered separately.

Subplates: G66/01 (G3/8)
G67/01 (G1/2)
G534/01 (G3/4)

Valve fixing screws (separate order)

The following valve fixing screws are recommended:

– **4 S.H.C.S. ISO 4762 - M6 x 40 - 10.9-fZn-240h-L**
(friction value $\mu_{\text{total}} = 0.09$ to 0.14)
Tightening torque $M_A = 12.5 \text{ Nm} \pm 10\%$,
Material No. **R913000058** (separate order)

or

– **4 S.H.C.S. ISO 4762 - M6 x 40 - 10.9**
(friction value $\mu_{\text{total}} = 0.12$ to 0.17)
Tightening torque $M_A = 15,5 \text{ Nm} \pm 10\%$